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10782IN THE CLAIMS:

1. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:

- (a) —producing a fluid stream from an internal combustion engine;
- (b) —extracting a refrigerant from the fluid stream; and
- (c) —automatically adding the refrigerant to a vapor compression system; and circulating the refrigerant through the vapor compression system.

2. (CURRENTLY AMENDED) The method as recited in claim 1 further including the step of storing the refrigerant prior to said step of automatically adding the refrigerant(c).

3. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:

- producing a fluid stream from an internal combustion engine;
- extracting a refrigerant from the fluid stream;
- automatically adding the refrigerant to a vapor compression system;

~~The method as recited in claim 2 further including the steps of sensing an amount of refrigerant in the vapor compression system; and~~

~~comparing the amount of refrigerant to a threshold value;[[,]] and~~

~~automatically adding the refrigerant extracted in said step (b)of extracting to the vapor compression system when the amount of refrigerant in-is below the threshold value.~~

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4. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:

producing a fluid stream from an internal combustion engine;

extracting a refrigerant from the fluid stream;

automatically adding the refrigerant to a vapor compression system;

The method as recited in claim 1 further including the steps of sensing an amount of refrigerant in the vapor compression system;[[.]]

comparing the amount of refrigerant to a threshold value;[[.]] and

automatically purging a predetermined amount of refrigerant from the vapor compression system when the amount of refrigerant is above the threshold value.

5. (CURRENTLY AMENDED) The method as recited in claim 1 wherein the stream of fluid is an internal combustion engine exhaust ~~steam~~ stream and the refrigerant is carbon dioxide.

6. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:

producing a fluid stream from an internal combustion engine;

extracting a refrigerant from the fluid stream, wherein said step of extracting
~~The method as recited in claim 1 wherein step (b) further includes adsorbing the refrigerant on an adsorbent and desorbing the refrigerant from the adsorbent; and~~

automatically adding the refrigerant to a vapor compression system.

7. (ORIGINAL) The method as recited in claim 6 wherein the refrigerant is carbon dioxide and the adsorbent is zeolite crystals, and said step of desorbing the carbon dioxide includes heating the zeolite crystals.

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8. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:
producing a fluid stream from an internal combustion engine;
extracting a refrigerant from the fluid stream, wherein said step of extracting
as recited in claim 1 wherein step (b) includes adsorbing the refrigerant on a metal salt of a metal salt solution and desorbing the refrigerant from the metal salt with heat; and
automatically adding the refrigerant to a vapor compression system.
9. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:
producing a fluid stream from an internal combustion engine;
extracting a refrigerant from the fluid stream. The method as recited in claim 1 wherein
the refrigerant is carbon dioxide and step (b) said step of extracting includes directing the fluid stream through a carbon dioxide selective membrane; and
automatically adding the refrigerant to a vapor compression system.
10. (CURRENTLY AMENDED) A method of automatically adding a refrigerant to a vapor compression system comprising the steps of:
producing a fluid stream from an internal combustion engine;
extracting a refrigerant from the fluid stream;
automatically adding the refrigerant to a vapor compression system; The method as
recited in claim 1 further including the steps of
compressing the refrigerant to a high pressure; [[.]]
cooling the refrigerant; [[.]]
expanding the refrigerant to a low pressure; [[.]];
and evaporating the refrigerant.
11. (CURRENTLY AMENDED) The method as recited in claim 10 further including the step of raising a pressure of the refrigerant added to the vapor compression system such that the pressure is substantially equal to said high pressure.

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12. (ORIGINAL) The method as recited in claim 1 wherein said internal combustion engine is utilized in a vehicle.

13. (CURRENTLY AMENDED) A method of automatically adding refrigerant to a vapor compression system comprising the steps of:

- (a) ~~providing~~ providing a vapor compression system having an initial amount of a system refrigerant;
- (b) ~~generating~~ generating a fluid stream including a supplemental supply of refrigerant;
- (c) ~~compressing~~ compressing the system refrigerant to a high pressure;
- (d) ~~cooling~~ cooling the system refrigerant;
- (e) ~~expanding~~ expanding the system refrigerant to a low pressure;
- (f) ~~evaporating~~ evaporating the system refrigerant;
- (g) ~~extracting~~ extracting the supplemental supply of refrigerant from the fluid stream; and
- (h) ~~automatically adding~~ automatically adding the supplemental supply of refrigerant to the vapor compression system to maintain a predetermined minimum amount of refrigerant.

14. (CURRENTLY AMENDED) The method as recited in claim 13 further including the steps of sensing an amount of system refrigerant in the vapor compression system, ~~and~~ comparing the amount of system refrigerant to a threshold value, and automatically adding the supplemental supply of refrigerant extracted in the step of extracting ~~(g)~~.

15. (CURRENTLY AMENDED) The method as recited in claim 14 wherein the stream of fluid is a vehicle exhaust ~~steam stream~~ and the refrigerant is carbon dioxide.

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16. (CURRENTLY AMENDED) A vapor compression system comprising:
a refrigerant source;
an extraction system to extract ~~said a refrigerant from said refrigerant source, and said~~
refrigerant circulates through the vapor compression system; and
a replacement system to automatically add said refrigerant to the vapor compression
system to maintain a predetermined minimum amount of refrigerant in the vapor compression
system.
17. (CURRENTLY AMENDED) A vapor compression system comprising:
a refrigerant source;
an extraction system to extract a refrigerant from said refrigerant source;
a replacement system to automatically add said refrigerant to the vapor compression
system to maintain a predetermined minimum amount of refrigerant in the vapor compression
system; and ~~The vapor compression system as recited in claim 16 further including~~
a sensor to measure an amount of refrigerant in the vapor compression system.
18. (ORIGINAL) The vapor compression system as recited in claim 17 wherein said
replacement system includes a storage tank that stores said refrigerant, and wherein said
replacement system automatically adds said refrigerant to the vapor compression system from
said storage tank when said amount of refrigerant in the vapor compression system is below a
threshold value.
19. (ORIGINAL) The vapor compression system as recited in claim 17 including a purging
system to purge said refrigerant from the vapor compression system when said amount of
refrigerant in the vapor compression system is above a threshold value.
20. (CURRENTLY AMENDED) The vapor compression system as recited in claim 16
wherein said refrigerant source is a vehicle exhaust stream and said refrigerant is carbon dioxide.

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21. (CURRENTLY AMENDED) A vapor compression system comprising:

a refrigerant source;

an extraction system to extract a refrigerant from said refrigerant source, and The vapor compression system as recited in claim 16 wherein said refrigerant is carbon dioxide, and said extraction system includes a carbon dioxide selective membrane that allows said carbon dioxide to permeate through said carbon dioxide selective membrane to extract said carbon dioxide from said refrigerant source; and

a replacement system to automatically add said refrigerant to the vapor compression system to maintain a predetermined minimum amount of refrigerant in the vapor compression system.

22. (ORIGINAL) The vapor compression system as recited in claim 16 further including a compression device to compress said refrigerant to a high pressure, a heat rejecting heat exchanger for cooling said refrigerant, an expansion device for reducing said refrigerant to a low pressure, and a heat accepting heat exchanger for evaporating said refrigerant.